

REMARKS

The Applicant respectfully requests entry of this amendment, reconsideration of unaltered claims and consideration of amended and new claims.

Pending Claims

Upon entry of this amendment, claims 1-44 will be pending. Claim 2-20 have not be altered since filing. Claim 1 is amended by this Response. Claims 21-44 have been added.

It is noted that the Office Action identifies claims 1-26 as pending and rejected. Applicant believes this is a typographically error, because only claims 1-20 were pending at the time of the Office Action.

Priority

The Applicant requests the Examiner's acknowledgement of the claim for priority, since a specific reference is included in the first sentences of the specification.

Rejection under 35 U.S.C. §103

The Examiner has rejected claims 1-20 as being unpatentable over Jones (U.S. Patent No. 4,606,927) and Molee (U.S. Patent No. 5,380,047) and Schwartz (U.S. Patent No. 4,767,205). The Applicant respectfully submits that none of these references includes all of the claimed elements, and further that no combination of the three references yields the claimed subject matter, and still further that the claimed subject matter is not obvious in light of any one of the references nor in light of any combination of the references.

The Jones Patent

Jones describes a multi-layer, multi-color microparticle and describes that such microparticle can be affixed to articles by entraining the microparticle in an adhesive. At column 4, lines 58-65 and column 6, lines 11-18, Jones describes that a fluorescent material can be included in the adhesive, so that the mark can be found on an article by exposing it to fluorescent stimulation. Jones does not, however, teach or suggest that this fluorescent material operate in any manner other than to indicate location of the microparticles. The fluorescent material is not part of the microparticle itself. The

fluorescent material does not have any coded significance. Jones does not detect or use the spectral signature of the fluorescent material.

The Molee Patent

Molee describes an authentication system that uses holograms and serial numbers in conjunction with a computer database. Molee offers no discussion or suggestion of the use of an energy-responsive element.

The Schwartz Patent

Schwartz describes microbeads in a coding scheme. Each of Schwartz' microbeads is one particular color. To obtain distinct codes, Schwartz mixes microbeads of various colors and sizes in various concentrations. To correctly decipher Schwartz' code after it has been used on or with articles for retrospective identification, it is necessary to locate a representative sample of the combination of microbeads. For at least this reason, Schwartz' system cannot be used in the context of explosives identification because one cannot know whether a representative sample has been found, and an incomplete sample may well yield an incorrect identification. Further, this system is impractical for liquid or large volume applications for the same reason.

Schwartz recommends the use of various size particles to increase the possible combinations. This size classification is impractical, particularly for in-the-field identification, since a 10 micron bead is difficult to distinguish from a 20 micron bead.

Analogous to Jones, Schwartz describes that the microbeads may be incorporated into a "chemical vehicle, e.g. epoxy resin, [that] contains additional UV dyes...". (Col. 5, lines 14-15.) This is then used to make "[a]n initial determination of the presence of the mark...". Further, Schwartz describes that "...with the microbeads combined with the vehicle containing different UV dyes, the number of possible codes increases by a factor equal to the number of different UV dyes." (Col. 5, lines 24-27.) At column 5, lines 42 et seq., Schwartz describes the process of mixing microbeads into a resin containing a UV dye. Schwartz does not, however, teach or suggest that fluorescent material be included within the microbeads.

The Applicant's Identification System

The Applicant's method and particles involve a reporter element that generates a spectral signature. A "reporter element" is "any molecule, crystal, atom or compound, including polymers, that, when stimulated by energy, yield a detectable energy, mass or other response".

Claims 5, 11, 14-41 and 44

None of the references show or describe a microparticle with a reporter element within a layer of the microparticle, as does the Applicant's method and particle recited in claims 5 and 14-41. Specifically, the independent claims in this group recite as follows:

Claim 5: "... a) entraining a reporter element in a layer of a microcoded particle;..."

Claim 14: "...a) entraining a reporter element in a layer of a microcoded particle;..."

Claim 20: "...b) reporter element entrained in a layer of said microparticle."

Claim 41: "...b) entraining a reporter element in one of said microparticle layers."

In addition, claims 11 and 44 recite as follows:

Claim 11: "...wherein reporter elements are incorporated into microcoded particles."

Claim 44: "... e) entraining a reporter element in a microparticle.."

Advantages are achieved by incorporating the reporter element into a layer of a microcoded particle. Multiple authentication levels are achieved in a single particle: the microcoded particle provides a visual code in its sequenced layers and the reporter element provides a spectral signature which can be read and evaluated by, for example, an automated hand-held spectral analyzer. This makes authentication convenient in the field. None of the particles in the cited references provide a reporter element that

generates a spectral signature, nor does any combination of the references yield a particle that produces a spectral signature.

Further, each particle contains the entire code and therefore only a single particle need be evaluated to decipher the code with respect to all levels of authentication. Thus, the Applicant's system and particle can easily be used in explosives applications as well as in applications where the particles are not applied in a fixed position and in free-flowing or fluid materials. This is in stark contrast to Schwartz which, as noted above, requires that a representative sample be evaluated to determine the code expressed. Further, Jones' and Schwartz's teachings relating to fluorescent or UV dye pertain to a substance, e.g. epoxy resin or adhesive, into which microparticles or microbeads are entrained and which is used in glueing the microparticles to a solid surface. Neither reference teaches how to incorporate fluorescent or UV dye if the particles are not placed on a solid surface. In contrast, the Applicant's claimed arrangement where the reporter element is entrained in a microcoded particle makes it possible to use these energy sensitive reporter element materials in applications involving explosives and other powdered, granular or fluid materials.

Claims 15-40 depend, directly or indirectly, from one of these independent claims and therefore also distinguish over Jones, Molee and Schwartz for the reasons discussed above with respect to these independent claims.

Claims 1-4 and 6-13

Independent claims 1 and 6 recite the detection of the spectral signature that results from subjecting the reporter element or spectral code to energy stimulation. Specifically:

- Claim 1:** "... b) subjecting the reporter element to energy stimulation;
 c) detecting the reporter element's spectral signature response to the stimulation; and

d) using a pre-defined algorithm, converting the response to an alpha-numeric code."

Claim 6: "...b) conducting spectral analysis of said spectral code to determine its spectral signature;
c) computing a printable code from the spectral signature using an algorithm;..."

None of the cited references teach or suggest the detection of a spectral signature. At most, Jones and Schwartz each teaches the detection of a UV or fluorescent dye within an adhesive to show the location of a microcoded mark. Neither Jones nor Schwartz, however, discusses the detection or use of a spectral signature generated by the dye.

New Claims 21-43

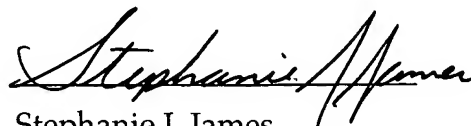
Claims 21-43 are new claims. These claims are supported by the specification and drawings as originally filed.

CONCLUSION

All of the claims remaining in this application should now be seen to be in condition for allowance. The prompt issuance of a notice to that effect is solicited.

Respectfully submitted,
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